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VOL. XXX OCTOBER, 1947 No. 3

THE WORKS OF J. R. WATSON ON THYSANOPTERA

By

STANLEY F. BAILEY
University of California

There are very few specialists on Thysanoptera in the world and these individuals have, over a period of years, assembled their own collections and libraries. From the widely-scattered literature and their own studies, these workers have compiled indices and keys to this group of small insects which the majority of entomologists cannot identify. Such helpful data in the main has never been published. Professor Watson's "Synopsis and Catalog of the Thysanoptera of North America" published in 1923, was one of the few attempts in this direction. In 1929 when the writer took up the study of thrips he was confronted with this problem — the lack of published reviews and check lists. Therefore, as a memorial to Professor Watson's work and in the spirit in which he was ever helpful to beginning students of thrips, I am presenting a list of his writings on Thysanoptera. Also, I am listing the species of thrips he described with their synonymy as far as it is known to me.

The following seventy publications, chiefly on the taxonomy and biology of thrips, were published by Professor Watson over a period of thirty-three years.

1913. Apr.—New Thysanoptera from Florida. Ent. News 24(4): 145-148, plate VI, figs. 1-7.

1913. Oct.—An unusual type of injury due to a thrips. Jour. Econ. Ent. 6(5): 413-414, plate II.

1915. Feb.—New Thysanoptera from Florida. Ent. News 26(2): 49-52, plate II, figs. 1-9.

1916. Mar.—New Thysanoptera from Florida. III. Ent. News 27: 126-133, plates V, VI.

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1918. Mar.-June.—Thysanoptera of Florida. Fla. Buggist I, 4, and II, 1 combined, pp. 53-55, 65-77. (Printed July 1918.)

1918. Dec.—New Thysanoptera from Florida. IV. Fla. Buggist, 2(3): 97-102. (Printed Feb. 1919.)

1919. Mar.—Watson, J. R. and Evelyn Osborn. Additions to the Thysanoptera of Florida. V. Fla. Buggist 2(4): 116-119, 120. (Printed Apr. 1919.)

1919. June.—Additions to the Thysanoptera of Florida. V. Fla. Buggist 3(1): 2-7.

1919. Sept.—The native host-plant of the Camphor Thrips. Fla. Buggist, 3(2): 25-27. (Printed in Nov., 1919.)

1919. Sept.—A new *Physothrips* from Oregon. Fla. Buggist, 3(2): 32. (Printed Nov., 1919.)

1920. Mar.—Key to No. American species of Physothrips. Fla. Buggist 3(4): 71. (Printed Apr., 1920.)

1920. July.—An apparently new *Haplothrips* from Cuba. Fla. Ent. 4(1): 7, 12.

1920. July & Sept.—New Thysanoptera from Florida. VII. Florida Ent. 4 (1 & 2): 13, 18-23, 27-30.

1920. Sept.—The toilet of thrips. Fla. Ent. 4(2): 25.

1921. Jan.—New Thysanoptera from Florida. VIII. Fla. Ent. 4(3): 35-39.

1921. June-Oct.—New Thysanoptera from New York. Bull. Brook. Ent. Soc. 16: 78-86.

1922. Apr.—New Thrips from Florida. IX. Fla. Ent. 5(4): 65-66.

1922. Apr.—Another new thrips from cocoanuts from Cuba. Fla. Ent. 5(4): 66-67.

1922. June.—The flower thrips. Univ. of Fla., Agric. Exp. Sta., Bul. 162, 1-51.

1922. June.—Another camphor thrips. Fla. Ent. 6(1): 6-7.

1922. Sept.—Additions to the Thysanoptera of Florida. X. Fla. Ent. 6(2): 21-23.

1922. Sept.—The greenhouse thrips out-of-doors in Northeastern Georgia. Fla. Ent. 6(2): 23.

1922. Dec.—On a collection of Thysanoptera from Rabun County, Georgia. Fla. Ent. 6(3): 34-39, 47-48.

1922. Dec.—A new thrips from citrus in Alabama. Fla. Ent. 6(3): 45.

1922. —Recent experiments with thrips on citrus. Proc. Fla. State Hort. Soc. 35: 52-55.

1923. Apr.—An addition to the Thysanoptera of Florida. XI. Fla. Ent. 6(4): 58.

1923. July.—The proper name and distribution of the Florida Flower thrips. Fla. Ent. 7(1): 9-11.

1923. Dec.—Synopsis and Catalog of the Thysanoptera of North America. Univ. of Fla., Agric. Exp. Sta., Bul. 168, pp. 1-100.

1923-24. —Adiciones a los Thysanoptera de Cuba. Mem. Soc. Cubana Hist. Nat. "Felipe Poey". 6(1-2) : 46-47.

1924. Apr.—Watson, J. R. and T. H. Hubbell. On a collection of Thysanoptera from Honduras. Fla. Ent. 7(4) : 60-62.

1924. Sept.—Thysanoptera of North America. Additions and a correction. Fla. Ent. 8(2) : 29-30.

1924. Nov.—A new *Bregmatothrips* (Thysanoptera) from England and Holland. Ent. Mo. Mag., 60: 253-254.

1924. Dec.—Additions to Thysanoptera of Florida. XII. Fla. Ent. 8(3-4) : 50-52.

1925. Aug. & Oct.—A new species of *Symphyothrips* (Thysanoptera) from Argentina. Fla. Ent. 9(2&3) : 29-30, 45.

1925. Oct.—The camphor thrips in Formosa. Fla. Ent. 9(3) : 39.

1926. Feb.—Two new Thysanoptera from Cuba. Fla. Ent. 9(4) : 53-55.

1926. Feb.—New Thysanoptera from Florida. XIII. Fla. Ent. 9(4) :58-60.

1926. Apr.—New Thysanoptera from Florida. XIII, cont'd. Fla. Ent. 10(1) : 9-12.

1926. June.—Citrus insects and their control. Florida Flower thrips. Univ. of Fla., Agric. Exp. Sta., Bul. 183: 382-387.

1926. July.—Ecological and geographical distribution of Thysanoptera in Florida. Fla. Ent. 10(2) : 21-24, 27.

1926. July.—A new Haplothrips from Abyssinia. Fla. Ent. Vol. 10(2) : 28-29.

1927. Jan.—A new Liothrips from Santo Domingo. Fla. Ent. 10(4) : 59-60.

1927. Jan.—New Thysanoptera from Florida. XIV. Fla. Ent. 10(4) : 60-62.

1927. July.—New Thysanoptera from Florida, cont'd. Fla. Ent. 11(2) : 26.

1927. July.—The Thysanopteron fauna of the Indian pipe. Fla. Ent. 11(2) : 27-30.

1927. Nov.—The English orchid thrips native to Florida. Additions to the Thysanoptera of Florida. XVI. Fla. Ent. 11(3) : 41-42.

1927. Nov.—The Thysanoptera fauna of the Indian pipe, cont'd. Fla. Ent. 11(3) : 42-44.

1931. Apr.—A new *Haplothrips* from Panama. Fla. Ent. 15(1) : 11-12.

1931. Nov.—Two new Thysanoptera from Colorado. Fla. Ent. 15(3) : 51-54.

1931. Dec.—A collection of Thysanoptera from western Oklahoma. Pub. Univ. Okla. Vol. 3, no. 4, Biol. Survey, pages 339-345, 7 figs.

1933. Jan.—Some Thysanoptera of the Great Smoky Mountains. Fla. Ent. 16(4) : 61-62.

1933. Mar. & Aug.—Two new species of *Plectrothrips*. Fla. Ent. 17(1&2) : 16-18, 33-34, figs. 1-4.

1933. Oct. & Dec.—Two new species of *Oedaleothrips* with notes on other species. Fla. Ent. 17(3&4) : 48-50, and 63-64.

1934. Nov.—Thysanoptera of the Geenton. Fla. Ent. 18(3) : 44-46.

1935. Mar.—Thysanoptera of the Geenton, cont'd. Fla. Ent. 18(4) : 55-62.

1937. July.—A sericothrips with an unusual habitat. Fla. Ent. 20(1) : 3-4.

1937. July.—A new Trichothrips (Haplothrips) from Alabama. Fla. Ent. 20(1) : 8-9.

1937. July.—Thysanoptera of the Geenton, cont'd. Fla. Ent. 20(1) : 12-15, fig. 3.

1937. Oct.—Thysanoptera of the Geenton, cont'd. Fla. Ent. 20(2) : 17-21, fig. 1.

1938. Mar.—A new *Liothrips* from Spanish moss. Fla. Ent. 21(1) : 14-15.

1938. July.—Watson, J. R. and J. R. Preer. A new Frankliniella (Thysanoptera) from Florida. Fla. Ent. 21(2) : 17-19, 2 figs.

1939. Feb.—Watson, J. R. and J. R. Preer. Two new Thysanoptera from Florida. Fla. Ent. 22(1) : 1-5, 2 figs.

1939. Apr.—Wilson, J. W. and J. R. Watson. Two new Thysanoptera from Mexico. Fla. Ent. 22(2) : 17-20, 3 figs.

1941. May.—Notes on Other Thrips found on Gladiolus. Univ. Fla., Agric. Exp. Sta. Bul. 357: 22-23.

1942. Jan.—A new Stephanothrips from Texas. Fla. Ent. 24(4) : 65-66.

1942. May.—Watson, J. R. and A. N. Tissot. Insects and other pests of Florida vegetables. Univ. Fla., Agric. Exp. Sta. Bul. 370: 78-80, 94-95, 105-106. (This bulletin is a revision of bulletins 134, 151, and 232 successively, each with same title and written by J. R. Watson.)

1942. June.—A new Frankliniella from Florida (Thysanoptera). Fla. Ent. 25(2) : 17-18, 2 figs.

1942. Oct.—Two new Frankliniellas from Mexico (Thysanoptera). Fla. Ent. 25(3) : 43-46.

1945. Nov.—The ecological and geographical distribution of the Thysanoptera of the Geenton. Fla. Ent. 28(2) : 33-36.

1946. Feb.—Distributional notes on two species of Thysanoptera. Fla. Ent. 28(3) : 53.

In addition to the above publications on thrips, as the head of the department of entomology, he reported on crop pests in the annual reports of the University of Florida, Agricultural Experiment Station. The following annual reports contained notes on injurious thrips:

1913, pp. LXI-LXIII.
1914, pp. LXV, LXVII-LXIX, 4 figs.
1916, pp. LXIV-LXXII.
1917, p. 64R.
1919, pp. 54R-55R.
1920, p. 20R.
1921, pp. 31R-32R.
1923, pp. 103R-105R.
1924, pp. 76R-77R.
1926, pp. 44R-45R.
1927, p. 46R.
1928, p. 48R.
1929, pp. 53-54.
1930, p. 67.
1931, p. 70.
1932, p. 69.
1933, p. 75.
1934, pp. 51-55.
1935, pp. 64, 67-68.

1936, pp. 64, 67-68.
1937, pp. 70, 73.
1938, pp. 83, 85.
1939, pp. 93-94, 96.
1940, pp. 72-74.
1941, pp. 71-73.
1942, pp. 74-75.
1943, p. 64.
1944, p. 59.
1945, p. 65.

SPECIES OF THRIPS DESCRIBED

By

J. R. WATSON

Aeolothrips floridensis Wats., 1916
Allothrips nubillicauda Wats., 1935
Anaphothrips (Proscirtothrips) monotropae Wats., 1927
Anthothrips dozieri Wats., 1918 = *Haplothrips gowdeyi* (Franklin), 1908
Anthothrips floridensis Wats., 1916 = *Haplothrips graminis* Hood, 1912
Arpediothrips mexicanus Wats., 1939
Bregmatothrips iridis Wats., 1924
Cephalothrips elongata Wats., 1919 = *Watsoniella*
Cephalothrips merrilli Wats., 1926
Chirothripoides minutus Wats., 1927 = *Preeriella*
Chirothrips floridensis Wats., 1920 = *C. mexicanus* D. L. Cwfd., 1909
Chirothrips floridensis var. *catchingsi* Wats., 1923 = *C. mexicanus* D. L. Cwfd., 1909
Chirothrips obesus var. *hubbelli* Wats., 1926 = *C. crassus* Hinds, 1903
Cryptothrips adirondacks Wats., 1921 = *Leptothrips mali* (Fitch), 1856
Cryptothrips citri Wats., 1918 = *Haplothrips*
Cryptothrips floridensis Wats., 1913 = *Liothrips*
Cryptothrips pini Wats., 1915 = *Leptothrips mali* (Fitch), 1856
Dictyothrips floridensis Wats., 1919 = *Echinothrips americanus* Morgan, 1913
Dolichothrips Wats., 1920 (genotype: *Cephalothrips elongata* Wats., 1919)
Erythrothrips durango Wats., 1923
Eurythrips longilabris Wats., 1920
Eurythrips robustisetis Wats., and Preer, 1939
Euthrips grandioculus Wats., 1920 = *Anaphothrips*
Euthrips tritici var. *projectus* Wats., 1915 = *Frankliniella cephalica* (D. L. Cwfd.), 1910
Frankliniella bratleyi Wats., 1942
Frankliniella cephalica var. *bruneri* Wats., 1926
Frankliniella cephalica var. *masoni* Wats., 1919
Frankliniella deserti-leonidum Wats., 1942
Frankliniella floridana Wats., 1918 = *Mycterothrips*
Frankliniella pontederiae Wats., and Preer, 1938
Frankliniella tolucensis Wats., 1942
Gastrothrips (?) *pallidus* Wats., 1935
Glyptothrips barythripoides Wats., 1935
Glyptothrips batesi Wats., 1935 = *Eurythrips*
Glyptothrips eddeyi Wats., 1935

Glyptothrips reticulatus Wats., 1934 = *Eurythrips*
Haplothrips abyssianae Wats., 1926
Haplothrips angustipennis Wats., 1922
Haplothrips cassiae Wats., 1920 = *Leptothrips mali* (Fitch), 1856
Haplothrips funki Wats., 1920
Haplothrips gracilis Wats., 1920
Haplothrips harnedi Wats., = *Cephalothrips errans* Moulton, 1911
Haplothrips merrilli Wats., 1920 = *Watsoniella*
Haplothrips oneco Wats., 1923 = *Cephalothrips errans* Moulton, 1911
Haplothrips orlando Wats., and Osb., 1919 = *Treherniella amplipennis* (Morgan), 1913
Haplothrips panamaensis Wats., 1931
Haplothrips querci Wats., 1920 = *H. graminis* Hood, 1912
Haplothrips rabuni Wats., 1922 = *H. graminis* Hood, 1912
Heterothrips aesculi Wats., 1915
Heterothrips auranticornis Wats., 1922
Heterothrips cuernavacae Wats., 1939
Heterothrips mexicanus Wats., 1923
Heterothrips tiliae Wats., 1923
Hindsiana catchingsi Wats., 1923
Hindsiana cocois Wats., 1922 = *Haplothrips melaleucus* (Bagn), 1911
Hindsiana pini Wats., 1922
Hoplandrothrips quercuspumilae Wats., 1920
Hoplothrips (Trichothrips) Wilsoni Wats., 1937
Idolothrips fuscus Wats., 1921 = *Megathrips spinosus* (Hood), 1908
Karnyia Wats., 1922 = *Karnyothrips* Wats., 1923
Karnyia weigeli Wats., 1922 = *Cephalothrips errans* Moulton, 1911
Karnyothrips weigeli (Wats.), 1922 = *Cephalothrips errans* Moulton, 1911
Leptothrips aspersus macro-ocellatus Wats., 1913 = *Leptothrips mali* (Fitch), 1856
Limocercyothrips Wats.,* 1926 = *Bregmatothrips* Hood, 1912
Limocercyothrips bicolor Wats.,* 1926 = *Bregmatothrips gracilis* Hd. and Wms., 1915
Liothrips bibbyi Wats., 1923
Liothrips caryae floridensis Wats., 1916
Liothrips caryae dendropogonis Wats., 1938
Liothrips flavoantennis Wats., 1916 = *L. citricornis* (Hood), 1908
Liothrips muscorum Wats., 1926
Liothrips perseae Wats., 1923
Liothrips seini Wats., 1927
Megalomerothrips Wats.,* 1918 = *Diceratothrips* Bagn., 1908
Megalomerothrips eupatorii Wats.,* 1918 = *Diceratothrips hartii* Hood, 1912
Merothrips floridensis Wats., 1927
Myrmecothrips Wats., 1920 = *Oedaleothrips* Hood, 1916
Myrmecothrips querci Wats., 1920 = *Oedaleothrips*
Neoeurhynchothrips Wats., 1923 = *Trichothrips*
Neoeurhynchothrips cubensis Wats., 1923 = *Trichothrips*

* This synonymy was pointed out to the writer by J. C. Crawford in a letter of March 27, 1940, who in turn was informed by J. R. Preer, an associate of Professor Watson.

Oedaleothrips andrei Wats., 1933 = *Bolothrips bicolor* (Heeger), 1852
Oedaleothrips hubbelli Wats., 1931
Oedaleothrips walteri Wats., 1933
Phloeothrips floridensis Wats., 1913 = *Hoplandrothrips jennei* (Jones), 1912
Physothrips blacki Wats., 1919
Plectrothrips brunneri Wats., 1933 = *Hoplothrips*
Plectrothrips montanus Wats., 1933
Polyporothrips Wats., 1927
Polyporothrips longipilosus Wats., 1927
Prosopothrips brunneus Wats., 1931
Scirtothrips owreyi Wats., 1924 = *Frankliniella fusca* (Hinds), 1903
Sedulothrips hubbelli Wats., 1923
Sericothrips langei var. *tissoti* Wats., 1937
Sophiothrips bicolor Wats. and Preer, 1939
Stephanothrips Whitcombi Wats., 1942
Symphyothrips reticulatus Wats., 1925
Thrips crenatus Wats., 1922
Thrips flavicauda Wats., 1927
Trachythrips watsoni Hood, var. *fairchildi* Wats., 1937
Treherniella Wats., 1923 (genotype: *Haplothrips orlando* Wats. and Osb., 1919)
Treherniella orlando (Wats. and Osb.), 1919 = *T. amplipennis* (Morgan), 1913
Trichothrips asymetricus Wats., 1937
Trichothrips brevitubus Wats., 1918 = *Barythrips*
Trichothrips bratleyi Wats., 1935
Trichothrips drakei Wats., 1921 = *Hoplothrips flavipes* (Bagn.), 1910
Trichothrips hoerneri Wats., 1931
Trichothrips salicis Wats., 1921 = *Cryptothrips rectangularis* Hood, 1908
Zygothrips floridensis Wats., 1922
Zygothrips wyomingensis Wats., 1923 = *Haplothrips leucanthemi* (Schrank), 1781

The Watson thrips collection, including the types, and library are deposited in the Department of Entomology, Florida Agricultural Experiment Station at the University of Florida, Gainesville.

EDITORIAL

With this number the FLORIDA ENTOMOLOGIST comes up to date. Volume XXX is the 1947 volume and we hope to get Number 4 out and bring the index up to date before the end of the year. We also hope to publish our quarterly at regular intervals from now on. FRIENDS and MEMBERS TAKE NOTICE — THAT WILL TAKE MANUSCRIPTS!

With this number we have exhausted our backlog of material for publication. We think we have been fortunate this year in the quality of the papers presented. It is hoped that their distribution will bring forth some new subscriptions and enable some of the members to secure additional support in the form of advertising for these pages.

The circumstances which resulted in the undue delay in publication of manuscripts received last fall or early in the spring appear now to have been eliminated. We feel confident that better service can be rendered in the future.

So send in those manuscripts and let's get on with this business of making the Florida Entomologist a bigger and better journal. Manuscripts may be submitted by non-members as well as members.

A KEY TO THE CRAYFISHES OF THE PICTUS SUBGROUP OF THE GENUS *PROCAMBARUS*, WITH THE DESCRIPTION OF A NEW SPECIES FROM SOUTH CAROLINA

(Decapoda, Astacidae)

HORTON H. HOBBS, JR.

Miller School of Biology, University of Virginia

The Pictus Subgroup of the Genus *Procambarus,* as defined by Hobbs (1942: 129), comprises six species (including the one described below) which inhabit various types of lotic situations in Florida, Georgia and South Carolina. Ecological data and notes on the distribution of these crayfishes have been summarized by Hobbs (1942 and 1947).

All of the described species of the Pictus Subgroup are poorly known, and in the collection of the Charleston Museum there are at least two undescribed ones which were collected from South Carolina.[1] It seems highly probable that further collecting along the Atlantic Seaboard from Florida to North Carolina will disclose the presence of several other closely related species.

Procambarus lepidodactylus sp. nov.

DIAGNOSIS.—Rostrum with lateral spines; acumen long and slender; areola broad with four to six punctations in narrowest part; male with hooks on ischiopodites of third and fourth pereiopods; palm of chela of

[1] A report on the crayfishes in the Charleston Museum is soon forthcoming.

first form male not bearded but bears two or three irregular rows of tubercles; postorbital ridges terminate cephalad in sharp spines; one acute lateral spine present on each side of carapace. First pleopod of first form male reaches coxopodite of third pereiopod: *mesial process* with a blade-like edge, and directed caudolaterad and somewhat distad; *cephalic process lateral in position with its cephalic margin lying caudad to the cephalic margin of the central projection; caudal element* with *caudal knob* obsolete, a caudolaterally-excavate *caudal process*, and an *adventitious process*, consisting of a corneous ridge along the mesial side of the central projection; *central projection* a prominent corneous tooth directed at a right angle to the main shaft of the appendage. Sternum of female just cephalad of annulus ventralis trough-like with caudally projecting bituberculate prominences on either side of the median area.

HOLOTYPIC MALE, FORM I.—Body subovate, compressed laterally. Abdomen narrower than thorax (9.6 - 10.5 mm. in widest parts respectively). Width and depth of carapace in region of caudodorsal margin of cervical groove subequal.

Areola broad (3.3 times longer than broad) with five or six puntations in narrowest part (punctations widely spaced); cephalic section of carapace about 2.5 times as long as areola (length of areola about 28.6% of entire length of carapace).

Margins of rostrum subparallel at base and converging cephalically to base of acumen; upper surface slightly concave caudad and subplane cephalad, with scattered setiferous punctation, and a row of similar ones along inner sides of margins; margins slightly raised, not swollen, and acumen distinctly set off by acute lateral spines; acumen long and slender, almost reaching distal end of peduncle of antennule; setae on acumen long and extending cephalad slightly beyond its cephalic end. Subrostral ridges clearly defined but not evident in dorsal aspect.

Postorbital ridges prominent, shallowly grooved laterad, and terminating cephalad in long acute spines; suborbital angle not prominent and obtuse; branchiostegal spine well developed and long. Strong acute lateral spine present on either side of carapace. Surface of carapace punctate dorsad and strongly granulate laterad.

Abdomen long than carapace (29.2 - 23.1 mm.).

Cephalic section of telson with four spines in each caudolateral corner.

Epistome broadly triangular and bearded cephalad; an acute spine present on cephalomedian angle.

Antennules of the usual form with a strong acute spine on ventral surface of basal segment.

Antennae extend caudad to caudal margin of fifth abdominal segment. Antennial scale of moderate width with a strong acute spine on outer distal margin; lamellar portion with no distinct angles (see Fig. 9).

Right chela elongate, slender, and covered with setose tubercles and punctations. Inner margin of palm with three poorly defined rows of small squamous tubercles, the middle one consisting of nine. Lower surface of palm with setiferous squamous tubercles. Fingers not gaping. Opposable margin of dactyl with one knob-like tubercle near base; if others are present they are completely obscured by the broad band of

minute scale-like denticles extending the length of the opposable margin (hence the name *lepidodactylus*). Mesial margin of dactyl with a clearly defined longitudinal keel, and with a few scattered tubercles at base; upper surface with a submedian longitudinal ridge; lower surface without a median longitudinal ridge. Opposable margin of immovable finger with a small knob-like tubercle near base and another one just proximad of midlength, and the lower surface bears a longitudinal submedian ridge; otherwise the two fingers are very similar. Both fingers studded with setiferous punctations which give them a hirsute appearance.

Carpus of first right pereiopod about 1.7 times longer than broad with a very faint oblique furrow above; surface laterad of furrow punctate, mesiad of it tuberculate; tubercles of mesial upper surface arranged roughly in two rows. Mesial surface, in addition to several small tubercles, with two prominent acute spines — one on cephalic margin, and the other only a short distanct caudad to it; cephaloventral margin with two large acute spines, the outer one larger.

Merus of first right pereiopod with an irregular longitudinal row of very small tubercles on upper surface, and near distal margin two very prominent acute spines; mesial surface punctate proximad and tuberculate distad; lateral surface punctate; lower surface with two rows of tubercles — an inner row of about 18 only three of which are spiniform, and a poorly defined outer row, three of which are large and spike-like; additional small tubercles present on either side and between these two rows.

Ischiopodites of third and forth pereiopods bearing hooks; hooks large but simple; basiopodite of fourth pereiopod with a prominent simple knob-like swelling extending toward terminal end of hook on ischiopodite.

Coxopodites of fourth and fifth pereiopods with ventrally projecting prominences — those on fourth moderately heavy and rounded, and directed caudomesiad; those on fifth compressed, plate-like and directed caudolaterad.

First pleopod reaching coxopodite of third pereiopod when abdomen is flexed (left pleopod not reaching quite so far cephalad as right one). Mesial process long, slender, somewhat compressed with the distal edge sharp, and directed caudolaterad and somewhat distad. Cephalic process compressed, truncate, and directed caudodistad; the whole process lies laterad of the central projection, and its cephalic margin lies caudad of the cephalic margin of the central projection. Caudal element consisting of (1) the caudal process, a corneous caudolaterally-excavate tooth directed caudodistad and (2) the adventitious process which is a corneous ridge along the mesial margin of the central projection; the caudal knob is obsolete. Central projection a large corneous tooth, the most conspicuous of the terminal elements, acute and directed caudad at approximately a right angle to the main shaft of the appendage.

ALLOTYPIC FEMALE.—Differs from the holotype in the following respects: cephalic section of telson with three spines in each caudolateral corner; chelae weaker than that of male (see measurements); opposable margins of fingers of chelae with a single row of minute denticles; merus of first pereiopod with only two spike-like tubercles in outer row on lower

surface (the other tubercles in this row practically obsolete). Annulus ventralis as figured (Fig. 8).

MORPHOTYPIC MALE, FORM II.—Differs from the holotype as follows: cephalic section of telson with three spines in the caudolateral corners; outer row of tubercles on merus of first pereiopod with only two spike-like ones, others obsolete. First pleopod without corneous terminal elements; caudal element represented by a very small tubercle; cephalic process cephalolateral in position. All secondary sexual characters much reduced.

MEASUREMENTS.—HOLOTYPE: carapace, height 10.0, width 10.5, length 23.1 mm.; areola, width 2.0, length 6.6 mm.; rostrum, width 3.4, length 7.0 mm.; abdomen, length 29.2 mm.; right chela, length of inner margin of palm 5.8, width of palm 3.7, length of outer margin of hand 15.0, length of dactyl 7.5 mm. ALLOTYPE: carapace, height 10.4, width 10.6, length 23.9 mm.; areola, width 1.6, length 6.4 mm.; rostrum, width 3.6, length 7.8 mm.; abdomen, length 30.4 mm.; right chela, length of inner margin of palm 4.3, width of palm 3.0, length of outer margin of hand 11.6, length of dactyl 5.7 mm.

TYPE LOCALITY.—Juniper Creek, a small, clear, moderately swift, sand-bottomed stream flowing through swampy terrain, one mile southwest of Patrick, Chesterfield County, South Carolina, on U. S. Highway 1. Little vegetation was present in the creek where the collections were made, and most of the specimens were taken in a dipnet pushed through the roots of plants growing along the banks. Here *P. lepidodactylus* was associated with an unidentified crayfish of the genus *Cambarus*.

DISPOSITION OF TYPES.—The male holotype, the female allotype and the second form male morphotype are deposited in the United States National Museum (Nos. 84198 and 84199). Of the remaining paratypes two first form males, one second form male, three females and three immature females are in my personal collection at the University of Virginia.

SPECIMENS EXAMINED.—**South Carolina:** *Chesterfield County* (Peedee River Drainage)—the type locality—two males, form I, and one female; similar stream, with more abundant vegetation, six miles northeast of Patrick, U. S. Highway 1—one male, form I, two males, form II, two females, two immature females. Both lots were collected on July 28, 1947.

VARIATION.—In the few specimens at hand I can detect no decided variations.

RELATIONSHIPS.—*Procambarus lepidodactylus* is probably most closely allied to *P. enoplosternum* Hobbs (1947: 5), differing from it principally in the structure of the first pleopod of the male—i.e., in *P. lepidodactylus* the caudal knob is lacking, and the cephalic process is lateral in position. The opposable

margins of the fingers of the chelae with thickly crowded minute denticles and reduced knob-like tubercles are similar to those of *P. pubescens* (Faxon).

KEY TO THE SPECIES OF THE PICTUS SUBGROUP[2]
(Based on the First Form Male)

1 Length of inner margin of palm of chela greater than length of dactyl; acumen of rostrum as long as or longer than rest of rostrum ..... *Procambarus youngi* Hobbs (1942: 131)

1' Length of inner margin of palm of chela less than length of dactyl; acumen of rostrum not as long as rest of rostrum 2

2(1') Cephalic surface of first pleopod with an angular hump at base of cephalic process; caudal knob extending almost as far distad as central projection ..... *Procambarus litosternum* Hobbs (1947: 9)

2' Cephalic surface of first pleopod with a rounded shoulder; caudal knob, if present, not extending almost as far distad as central projection 3

3(2') First pleopod with central projection directed caudad; viewed laterally, no distinct gap between bases of the central projection and cephalic process 4

3' First pleopod with central projection directed caudodistad; viewed laterally, a distinct gap between bases of the central projection and cephalic process 5

4(3) First pleopod with cephalic margin of cephalic process distinctly cephalad of cephalic margin of central projection; caudal knob clearly defined ..... *Procambarus enoplosternum* Hobbs (1947: 5)

4' First pleopod with cephalic margin of cephalic process distinctly caudad of cephalic margin of central projection; caudal knob obsolete ..... *Procambarus lepidodactylus* sp. nov.

5(3') First pleopod with caudal knob knob-like; caudal process viewed caudally a subacute spine; cephalic process directed caudodistad ..... *Procambarus pictus* (Hobbs) 1940: 419

5' First pleopod with caudal knob in the form of a ridge; caudal process viewed caudally a broad triangular tooth; cephalic process directed distad ..... *Procambarus pubescens* (Faxon) 1884: 109

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Hobbs, Horton H., Jr., 1940. Seven new crayfishes of the genus *Cambarus* from Florida, with notes on other species. *Proc. U. S. Nat. Mus.* 20 (1136): 643-694, pls. 62-70.

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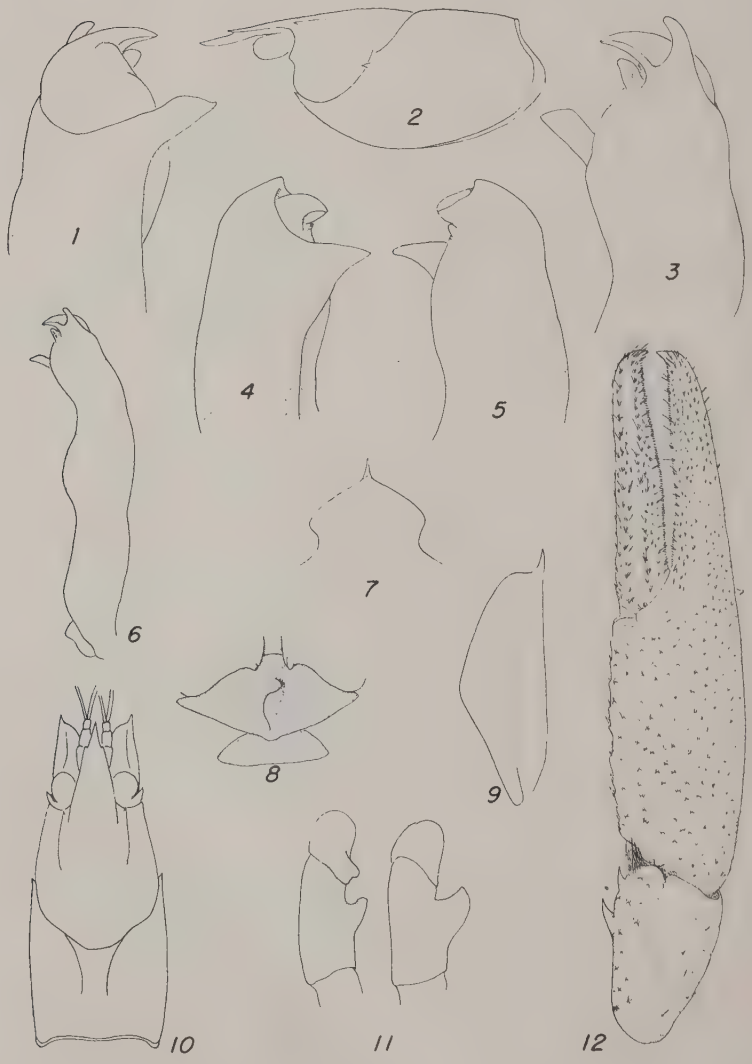
1947. Two new crayfishes of the genus *Procambarus* from Georgia, with notes on *Procambarus pubescens* (Faxon). *Quart. Jour. Fla. Acad. Sci.* 9(1): 1-18, 2 pls.

[2] Hobbs 1942: 129.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EXPLANATION OF PLATE

(*Procambarus lepidodactylus* sp. nov.)

Pubescence removed from all structures illustrated except in Figure 12.

Fig. 1. Mesial view of distal end of first pleopod of first form male.
Fig. 2. Lateral view of carapace.
Fig. 3. Lateral view of distal end of first pleopod of first form male.
Fig. 4. Mesial view of distal end of first pleopod of second form male.
Fig. 5. Lateral view of distal end of first pleopod of second form male.
Fig. 6. Lateral view of first pleopod of first form male.
Fig. 7. Epistome.
Fig. 8. Annulus ventralis.
Fig. 9. Antennal scale.
Fig. 10. Dorsal view of carapace.
Fig. 11. Basiopodites and ischiopodites of fourth and third pereiopods of first form male.
Fig. 12. Distal three podomeres of first pereiopod of first form male.

A NEW SPECIES OF *GYRETES* FROM WESTERN FLORIDA

(Coleoptera; Gyrinidae)

FRANK N. YOUNG

The new species of *Gyretes* described below represents a remarkable record for the genus in the Eastern United States. It was at first thought to be *Gyretes sinuatus* LeConte, the only member of the genus reported east of the Rocky Mountains, but comparison with specimens in the United States National Museum and the Museum of Comparative Zoology indicates that its closest allies are South American and Mexican. It may possibly be a chance introduction by commerce, but this seems improbable.

The genus *Gyretes* can easily be distinguished from the other genera of the "whirligig beetles" or "mellowbugs" (Gyrinidae) which occur in North America by the peculiarly elongate last abdominal segment, which is conical and has a row of hairs on the middle of the upper surface.

Gyretes iricolor sp. nov.

DIAGNOSIS: A small, iridescent, *Gyretes* with the elytra and pronotum narrowly margined with yellow, and the epipleura yellowish. Elytra truncate in both sexes, the posterior margin convex in the male, concave in the female; sutural angles produced in female but not dehiscent, only slightly produced in male; outer angle of elytral truncation not produced, but forming nearly a right angle. Pubescent border of pronotum and elytra

very narrow, not reaching the suture in the female. Length: About 4.5 mm. in male; 4.9 mm. in female.

Iricolor is probably most closely allied to *pygmaeus, oblongus,* and *tumidus* of Regimbart, but differs from the descriptions of all of these. From *sinuatus* LeConte, *iricolor* is easily separated by the narrow pubescent border of the elytra, narrow but distinct yellow margin of the elytra, and by the different truncation of the elytra. From *californicus* Regimbart, *iricolor* is distinguished by its smaller size, different pubescent border, and unproduced outer angle of the elytral truncation.

HOLOTYPE MALE: Elongate, broadest near basal third of elytra, attenuate behind and before. Length 4.5 mm., width at basal third of elytra 2.1 mm., width at base of pronotum about 1.9 mm., width at apex of pronotum about 1.6 mm. *Elytra:* Convexly truncate at apex, the outer angle not at all produced, but evident, forming nearly a right angle; sutural angle nearly a right angle, just perceptibly produced. *Legs:* Anterior tibiae not produced at outer apical angles; gradually broadened from constricted base to apex; anterior tarsi moderately dilated, ovate. *Anal Sternite:* Dull, micro-reticulate, not carinate. *Sculpture:* Clypeus and frons finely, densely punctate, dull; vertex and occiput finely, sparsely punctate, shining; pronotum finely punctate, micro-reticulate, less shining than the elytra; pubescent border of pronotum triangular, broadest anteriorly and narrowed posteriorly, coarsely and densely punctate throughout; elytra almost impunctate, with fine microsculpture throughout, strongly shining and iridescent; pubescent border of elytra very narrow, reduced to a single row of punctures at middle, slightly dilated anteriorly and narrowly expanded along apical truncation of elytra but narrowing again before reaching the suture. *Color:* Iridescent black above, with pronotum and elytra very narrowly bordered with yellow; pronotum dark brown, slightly bronzed, iridescent; venter dark reddish brown, with the legs, abdomen, and middle of thorax lighter reddish brown; epipleura and pronotal epipleura, anterior coxae, bases of antennae, palpi, and front of labrum yellow or light yellowish-brown.

ALLOTYPE FEMALE: Similar to the male, but slightly broader and larger, lacking the dilatation of the anterior tarsi, slightly darker in color below, and with the pubescent border of elytra not reaching the suture. The tips of the elytra are truncate as indicated in the diagnosis. Length 4.9 mm., width near basal third of elytra 2.3 mm., width at base of pronotum about 2.0 mm., width at apex of pronotum about 1.4 mm.

Holotype and allotype from Sandy Creek, Holmes County, Florida about 10 miles east of DeFuniak Springs. Sandy Creek is a large, swift, sand-bottomed tributary of the Choctawhatchee River. The holotype was collected Oct. 18, 1941 in company with *Gyrinus analis* Say; the allotype Dec. 11, 1937 from debris along the margin of the stream. The species probably occurs over a rather large area in western Florida, where it should be looked for in the swifter streams.

The holotype and allotype will be deposited in the Museum of Zoology, University of Michigan, Ann Arbor, Michigan.

I wish to thank Dr. R. E. Blackwelder and Dr. E. A. Chapin of the United States National Museum, and Dr. P. J. Darlington, Jr., of the Museum of Comparative Zoology, for the loan of material from their respective museums.

A NEW WOLF SPIDER FROM FLORIDA, WITH NOTES ON OTHER SPECIES [1]

H. K. WALLACE

The following three species of spiders from north-central Florida are quite similar in appearance and size and may be easily confused. One of these is new; all three have distinctive genitalia and different habitat preferences. For the two described species references to papers containing figures of the genitalia are given.

Lycosa apothetica n. sp.

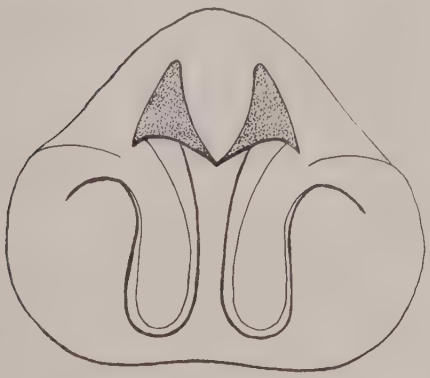

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Fig. 1.—*Lycosa apothetica*, n. sp., epigynum.

Fig. 2.—*Lycosa apothetica*, n. sp., palpus.

HOLOTYPE: Female, from pond margin in slash-pine flatwoods [2] 6.5 miles from the Alachua County, Florida, courthouse on the west side of the road to the Devil's Mill Hopper (via Fla. 26), October 26, 1937, ALLOTYPE, a male with the same data: both in author's collection.

DESCRIPTION OF HOLOTYPE: In alchohol — Overall color effect a dusky reddish or yellowish brown; femora annulate. Median stripe of the carapace widest behind the posterior lateral eyes, here equalling the width of the posterior median eye row; median stripe incloses a median dark streak between the eyes and two dark spots behind the eyes. Sides of carapace dusky with a wide, irregular submarginal light area. Dorsum of abdomen dusky brown with an indistinct hastate mark and other dark maculation; venter almost immaculate, sides of abdomen with black spots. Sternum, endites, labium and coxae immaculate, light reddish brown in color. Femora beneath with large, faint dusky areas. Palpal joints light, immaculate.

Carapace longer than wide (4.0 mm./2.9 mm.), 1.3 mm. high; width of head 1.9 mm. Posterior eye quadrangle wider than long (1.4 mm./1.0 mm.), eyes of the median row slightly larger than those of the posterior (0.4 mm./0.3 mm.); median row slightly wider than the anterior (1.0 mm./0.8 mm.). Anterior row of eyes slightly procurved, median eyes larger than laterals; clypeus equals diameter anterior median eye. Lower margin of furrow of chelicera with three equal, almost contiguous, teeth. Distance from top of posterior median eyes to clypeus 0.6 mm. Palpal segments: femur 1.4 mm., patella 0.7 mm., tibia 0.8 mm., tarsus and claw 1.2 mm. Legs 4123.

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	3.9	1.5	2.2	2.0	1.5	11.1
II	2.7	1.5	2.0	2.0	1.5	9.7
III	2.6	1.3	1.8	2.2	1.5	9.4
IV	3.3	1.6	2.8	3.7	1.9	13.3

DESCRIPTION OF ALLOTYPE: In alcohol — General body color a dusky yellowish or reddish brown; legs annulate. Median stripe of carapace incloses a median dark line which extends posteriorly to the posterior margin of the posterior lateral eyes; median stripe widens behind the posterior lateral eyes to equal the width of the posterior median row; here incloses two dark spots. Sides of carapace dusky with radially disposed darker bands; a sparse covering of white hairs gives the appearance of an indistinct submarginal stripe. Dorsum of abdomen with distinct hastate mark, with black maculation behind; venter yellow with a few black spots. Sternum yellow, immaculate; coxae and femora somewhat darker in color. Palpal joints about as light in color as sternum; endites light, labium darkens proximally.

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[1] Contribution from the Department of Biology and Geology, University of Florida, Gainesville.

[2] For descriptions of terrestrial habitats in a region in northern Florida see Laessle, A. M., 1942. *The Plant Communities of the Welaka Area.* University of Florida Publications. Biological Science Series, Vol. 4, No. 1.

Carapace longer than wide (3.5 mm./2.5 mm.), 0.8 mm. high; width of head 1.4 mm. Posterior eye quadrangle wider than long (1.0 mm./0.8 mm.), eyes of the median row slightly larger than those of the posterior (0.4 mm./0.3 mm.); median row slightly wider than anterior row (0.9 mm./0.7 mm.). Anterior row of eyes slightly procurved, median eyes larger than laterals; clypeus equals diameter anterior median eye. Lower margin of furrow of chelicera with three teeth, equally spaced, lateral tooth largest, middle tooth larger than the median. Distance from top of posterior median eyes to clypeus 0.6 mm. Palpal segments: femur 1.3 mm., patella 0.6 mm., tibia 0.6 mm., cymbium 1.0 mm. Legs 4123.

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	2.7	1.4	2.3	2.3	1.5	10.2
II	2.4	1.3	2.0	2.1	1.5	9.3
III	2.4	1.2	1.7	2.3	1.3	8.9
IV	3.1	1.2	2.5	3.3	1.8	11.9

SPECIMENS RECORDED: 57 — 8 ♂♂, 49 ♀♀.

GEOGRAPHIC DISTRIBUTION: Southeastern states; known at present from Florida, Georgia, and Mississippi.

RECORDS: **Florida**: *Alachua Co.:* 1774 Leon Street, Gainesville, Apr. 11, 1933, Cat. 140 — 1 ♀; pine flatwoods 2.0 miles east of Alachua County courthouse on Fla. 26: Jan. 19, 1937 — 2 ♀♀; Jan. 20, 1937 — 4 ♀♀; Jan. 22, 1937 — 1 ♀; Jan. 30, 1937 — 9 ♀♀; Apr. 19, 1937 — 2 ♀♀; pond margin in slash-pine flatwoods 6.5 miles from the Alachua County courthouse on the west side of the road to the Devil's Mill Hopper (via Fla. 26): Feb. 7, 1937 — 5 ♀♀; Oct. 26, 1937 — 2 ♂♂, 3 ♀♀ (including holotype and allotype); pine flatwoods on east side of San Felasco Hammock: Feb. 7, 1938, Cat. 1007 — 6 ♀♀; Feb. 7, 1938, Cat. 1008 — 1 ♂, 3 ♀♀; slash-pine flatwoods about 4.3 miles northwest of University of Florida campus on U. S. 441, Feb. 15, 1938, Cat. 1023 — 1 ♀; slash-pine flatwoods about 5.5 miles northwest of University campus on U. S. 441, Feb. 15, 1938, Cat. 1024 — 3 ♀♀; 5.0 miles west of Gainesville, Mar. 18, 1938, W. J. Gertsch — 1 ♀; Nov. 2, 1938, C. Benton — 1 ♂; *Leon Co.:* north shore of "Seven Mile" Pond, Apr. 16, 1936, H. K. Wallace and R. E. Bellamy, Cat. 541A — 3 ♀♀.

Georgia: *Turner Co.:* 9.0 miles southeast of Sycamore, seepage area, May 6, 1937, Cat. 606 — 1 ♀.

Mississippi: 42 miles east of New Orleans on U. S. 90, F. Norman and party, Dec. 15, 1939, HKW Cat. 652A & B — 4 ♂♂, 4 ♀♀.

REMARKS: Males have been collected only in October, November, December and February while females have not been taken after May until October. *Lycosa apothetica* is a very secretive animal and usually stays close by, or in, the mouth of its retreat; this probably accounts for the small number of county records. I have not found this species on bare, open stretches of soil devoid of leaf mould or vegetational mattings. In north-central Florida it is usually found in moist situations in pine flatwoods (pond margins, cypress bay margins, etc.), but may be found occassionally in other situation.

This species resembles *L. parthenus* and *L. acompa* somewhat in appearance and size but the genitalia are distinct in both sexes. In *L. acompa* the lateral processes of the guide of the epigynum are not recurved; in *L. parthenus* they are recurved, extending cephalad to a point in front of the cephalic end of the median process of the guide; in *L. apothetica* the lateral processes are also recurved, but they extend cephalad only about three-fourths of the length of the median process of the guide. Differences in the male palpi can be determined by a study of published figures.

The differences in habitat preferences are indicated in the discussions under each species.

Lycosa acompa Chamberlin

1924. *Lycosa acompa* Chamberlin. Proc. U. S. Nat. Mus., 63(13): 29; pl. 6, fig. 45. [♀ — type locality, New Orleans, La.; epigynum figured].

1934. *Lycosa abdita* Gertsch. Amer. Mus. Nov., No. 726: 3; fig. 6. [figure of epigynum].

1935. *Lycosa acompa*, Gertsch and Wallace. Amer. Mus. Nov., No. 794: 11-12; fig. 31. [figure of male palpus].

GEOGRAPHIC DISTRIBUTION: Known from Texas, Louisiana, Georgia, and Florida.

RECORDS: **Florida:** Edgewater, Mar. 12, 1939, C. A. Frost, M. C. Z. collection — 1 ♂; *Alachua Co.:* near Alachua: May 10, 1941, Cat. 1139 — 5 ♂♂, 2 ♀♀; May 3, 1941, Cat. 1137—1 ♂; Gainesville vicinity: Apr. 29, 1933, Cat. 207 — 1 ♂; Apr. 16, 1934, Cat. 285 — 1 ♂; May 1, 1936, Cat. 549 — 2 ♂♂; Jan. 19, 1937 — 2 ♂♂, 1 ♀; Feb. 9, 1938, Cat. 1012 — juv. ♂; Apr. 22, 1937 — 4 ♂♂, 2 ♀♀ (one pair observed copulating); May 14, 1937, Cat. 611A — 2 ♀♀; near Hawthorne, Mar. 24, 1935 — 2 ♂♂; Mesophytic Hammock of Biology Station on Newnan's Lake: Jan. 23, 1937 — 1 ♂, 6 immatures; Apr. 16, 1934, Cat. 284 — 2 ♀♀; Apr. 24, 1937 — 3 ♀♀; San Felasco Hammock: May 5, 1937 — 1 ♂; May 21, 1937 — 1 ♀; June 5, 1937 — 2 immatures; June 19, 1937 — 2 ♀♀; Sugarfoot Hammock, Mar. 19, 1938, Cat. 1031 — ♂♂, ♀♀; Prairie Creek Magnolia-Cypress Hammock, Apr. 18, 1935, Cat. 394 — 1 ♀; Wauberg Lake Hammock, Mar. 14, 1933, Cat. 121 — 1 ♀. *Brevard Co.:* Cocoa, Feb. 23, 1925, M. C. Z. collection — 1 ♀. *Collier Co.:* Everglades, Feb. 1935, W. M. Barrows — 1 ♀. *Escambia Co.:* Riverview, Apr. 6, 1934, Cat. 282 — 1 ♂, 44 ♀♀. *Flagler Co.:* 3.6 miles east of county line on Florida 28, Apr. 1, 1939, Cat. 1072 — 1 ♂. *Lake Co.:* Lake Eustis, Jan. 4, 1935, Cat. 366 — 1 ♀. *Lee Co.:* Ft. Myers, Jan. 20, 1937, W. M. Barrows — 1 ♂. *Levy Co.:* in the Gulf Hammock, Apr. 20, 1935, Cat. 397, G. Van Hyning — 1 ♂. *Liberty Co.:* Torreya Ravine, Apr. 10, 1935, Cat. 382 — 9 ♂♂, 3 ♀♀, 1 immature; Sweetwater Branch, Apr. 11, 1935, Cat. 383C — 1 ♂, 2 ♀♀. *Polk Co.:* 3 miles east of Lakeland, June 26, 1935, Cat. 420 — 1 ♀. *Putnam Co.:* Welaka, U. of F. Conservation Reserve: June 2, 1947, Cat. 1267 — 1 ♀; June 3, 1947, Cat. 1267 — 1 ♀ with egg sac; June 6, 1947, Cat. 1273 — 5 ♀♀; June 6, 1947, Cat. 1273A — 3 ♀♀; June 7, 1947, Cat. 1275 — 1 ♀. *Taylor Co.:* Stephensville, Mar. 26, 1933, Cat. 131 — 1 ♂, 1 ♀. *Volusia Co.:* Benson Springs, Nov. 11, 1933, Cat. 252 — immatures; 1.8 miles southeast of county line on U. S. 1, Apr. 1, 1939, Cat. 1074 — 1 ♂.

Georgia: *Turner Co.:* 9.0 miles southeast of Sycamore, May 6, 1937, Cat. 606 — 3 ♂♂, 5 ♀♀.

Texas: Edinburg, Feb. 14, 1935, Rutherford — 1 ♂, 1 ♀.

REMARKS: This is a spring form, the earliest date for the collection of a male being January 19 and the latest May 10. Copulation has been observed in April, a female with egg sac in June. By the middle of the summer this species is much reduced in numbers.

Lycosa acompa is one of the characteristic species of the leaf mould of mesophytic hammocks in north-central Florida; it seems to favor moist situations in these hammocks. It also occurs in low or wet hammocks, swamps, and around wet areas in pine flatwoods. Its main requirements appear to be shade, leaf mould, and moist soil. It is usually found close to its retreat which is most often a shallow burrow in the ground beneath the leaf mould; sometimes it is found under or in rotten logs. Like *Lycosa apothetica* it is a very furtive species, hiding in the leaf mould and not venturing far from its retreat. Sometimes these two species are found in the same habitat.

Lycosa parthenus Chamberlin

1925. *Lycosa parthenus* Chamberlin. Bull. Mus. Comp. Zool., Harvard, 67(4): 228. [♀ — type locality, Bartow, Florida].

1935. *Lycosa parthenus*, Gertsch and Wallace. Amer. Mus. Nov. No. 794: 12-13; figs. 28 and 29. [figures of male palpus and epigynum].

GEOGRAPHIC DISTRIBUTION: Known only from Florida.

RECORDS: **Florida:** *Alachua Co.:* 2 miles north of Melrose on Fla. 80, May 31, 1936, Cat. 558A — 1 ♀; approximately 2.7 miles northeast of Alachua on Fla. 113, Feb. 4, 1938, Cat. 1002 — 3 ♂♂, 1 ♀; vicinity of Gainesville: Apr. 2, 1933, Cat. 136 — 1 ♀; Oct. 25, 1933, Cat. 246 — 1 ♂ 1 ♀; Oct. 25, 1933, Cat. 247 — 3 ♀♀; Oct. 31, 1933, Cat. 250 — 1 ♀; Apr. 17, 1934, Cat. 286 — 1 ♀; May 1, 1936, Cat. 549 — 1 ♀; Jan. 23, 1937 — 1 ♀; Jan. 30, 1937 — 1 ♂; Feb. 3, 1937 — 1 ♂, 9 ♀♀; Mar. 6, 1937 — 1 ♀; May 14, 1937 — 1 ♀; May 15, 1937 — 2 ♀♀; June 12, 1937 — 1 ♀; Oct. 26, 1937 — 2 ♀♀; Oct. 27, 1937 — 1 ♂, 2 ♀♀; Feb. 7, 1938, Cat. 1009 — 1 ♂; Feb. 8, 1938 — 1 ♂, 1 ♀; Feb. 9, 1938, Cat. 1010 — 6 ♂♂, 5 ♀♀; Feb. 9, 1938, Cat. 1011 — 1 ♂, 1 ♀; Feb. 13, 1938, Cat. 1018 — 1 ♀; Feb. 16, 1938, Cat. 1025 — 1 ♂; Feb. 16, 1938, Cat. 1027A — 1 ♂. *Clay Co.:* Keystone Heights, Feb. 5, 1938, Cat. 1006 — 1 ♀. *Citrus Co.:* 10 miles south of Inverness, May 1, 1936, Cat. 577 — 1 ♀; Sweetgum Cavern, near Floral City: Dec. 18, 1936 — 1 ♀; Jan. 29, 1937, Cat. 580 — ♂♂, ♀♀ with egg sacs; Feb. 26, 1937, Cat. 582 — 1 ♀ with egg sac. *Escambia Co.:* Pensacola, Jan. 31, 1925, W. M. Barrows — 1 ♂. *Lake Co.:* Eustis, Jan. 2, 1935, Cat. 361 — 1 ♂, 2 ♀♀. *Levy Co.:* Sea Horse Island, Apr. 28, 1934, Cat. 298 — 1 ♀. *Liberty Co.:* near Sweetwater Branch, Apr. 11, 1935, Cat. 383C — 1 ♀; near Torreya Ravine, Apr. 12, 1935, Cat. 385 — 1 ♀. *Putnam Co.:* Welaka, U. of F. Conservation Reserve, May 2, 1947, Cat. 1253 — 1 ♀.

REMARKS: *Lycosa parthenus* matures and mates during January and February in the Gainesville region; however, I have two records of males from October. Females with egg sacs have been taken only during Jan-

uary and February. During the spring adults gradually decrease in numbers until, by the middle of the summer, they are rare. By June the young have left the mother and are common in the leaf mould of appropriate situations.

This species is apparently confined to dry leaf mould. In such xeric situations as turkey oak or old fields it is found among the leaves under trees but is missing on open sandy stretches. Wherever dry leaf mould occurs, including all situations drier than mesophytic hammock, this species is likely to be present. In this respect it differs from the two preceding species.

Trabea aurantiaca (Emerton)

1885. *Aulonia aurantiaca* Emerton. Trans. Conn. Acad. Sci., 6: 499; pl. 49, figs. 6, 6a, 6b.

RECORDS: **Florida:** *Putnam Co.:* Welaka, U. of F. Conservation Reserve: June 2, 1947, Cat. 1267 — 1 ♀; June 3, 1947, Cat. 1267 — 8 ♀♀, one with an egg sac; June 3, 1947, Cat. 1269 — 1 ♀; June 6, 1947, Cat. 1272 — 2 ♀♀; June 6, 1947, Cat. 1272A — 3 ♀♀ with egg sacs; June 6, 1947, Cat. 1273 — 3 ♀♀, one with egg sac; June 6, 1947, Cat. 1273A — 1 ♀; June 7, 1947, Cat. 1275 — 6 ♀♀; June 6, 1947, Cat. 1275A — 1 ♀ with egg sac.

REMARKS: The above collections were made in three types of situations, (1) under dry sphagnum moss—this had been in a shallow pond in pine flatwoods bordering a bayhead, but the pond had dried up completely leaving a layer of sphagnum about an inch thick suspended several inches above the ground, the sphagnum being suspended by its attachment to reeds and other plants growing in the area. The soil beneath the sphagnum was moist. (2) in and under moist rotten logs. (3) in a very thick leaf mould of a *Pinus australis - Quercus cinerea* association on Blanton Fine Sand. This situation had the appearance of being almost xeric, but I believe the thickness of the ground cover produced a fairly humid environment. All three situations were collected at night by raking an area clean of cover, or tearing up rotten logs, and then shining the disturbed areas with a headlight.

RESEARCH REQUEST

Dr. Herbert Osborn has written to the society requesting data on recent activities in entomology, especially the part played in the recent war by individual entomologists, either in actual army duties or in reasearch related to the war. He also wishes to add pictures of entomologists to the collection of photographs now being made at the Department of Entomology, Ohio State University. Any data or photographs from members of the Florida Entomological Society will be appreciated. They should be sent to Dr. Herbert Osborn, B and Z Building, Ohio State University, Columbus 10, Ohio.

THE FEMALE OF *LESTODIPLOSIS FLORIDANA* Johannsen

(Cecidomyiidae: Diptera)

O. A. JOHANNSEN
Cornell University, Ithaca, N. Y.

In the first number of volume 28 of THE FLORIDA ENTOMOLOGIST, page 8, the male of the species noted above was described. Recently my colleague, Dr. J. G. Needham, turned over to me specimens of both sexes reared from the flower heads of *Bidens pilosa* collected at Archibald's, near Lake Placid, Florida (December 14), and at Sarasota, Florida (January 15).

In color and most structural features the sexes differ but little. The species is associated with *Asphondylia bidens* Joh. and occurs in the flower heads of the host plant probably as predator.

Female. Head, thorax, abdomen, and legs yellow; antennae brownish with the necks of the segments yellow; mesonotum with three wide brown vittae, sternum brown, basal abdominal segments with indications of darker fasciae in well colored specimens; apical segment of feet dark.

Antennae with 14 segments, length 1.2 mm.; the basal segment more or less quadrate with a few long bristles apically; the second segment nearly spherical, sparsely bristled; flagellar segments with the nodes, except the last 3 or 4 terminal ones, somewhat constricted a short distance proximal of the middle, the nodes averaging 0.05 mm. in length, the necks 0.035 mm., except the last two or three which are a little shorter; apical segment 0.06 mm. long. Each flagellar segment with a whorl of few long bristles near the base, and another and somewhat more irregular one near the tip, except the last three segments on which the bristles are more irregularly distributed. The antennal sense tubercles about as shown in figure 25 of *L. crataegifolia* (in Felt's Report of the State Entomologist, N. Y., 1918, page 135). Palpi with four segments, the first about as long as broad, the second about twice, the third two and a half, and the fourth about three times as long as broad, the second widest. Ovipositor stout, terminal lobes short oval, not twice as long as broad. First tarsal segment of all feet subequal and respectively from a fourth to a sixth as long as the next succeeding segment. Claws simple, evenly curved; empodium about as long as the claws. Wing markings like those of the male, faint and illy defined in rubbed, alcoholic, or slide-mounted specimens;

venation as in the male. Length 1.4 to 1.6 mm., wing length 1.5 mm.

Male. To the description of the male previously published may be added that the aedeagus is slender, slightly sinuous and ending bluntly, projecting caudally nearly to the apex of the basistyle; dorsal plate hairy, lobes rounded. Antennae a third to a half longer than the insect. Wing length 1.2 to 1.4 mm.

Specimens in the Cornell University Collection.

A NEW CATTLE LOUSE IN FLORIDA

At the recent meeting of the Florida Entomological Society, (February 15, 1947), W. G. Bruce announced that the "tail louse" of cattle has been identified as *Haematopinus quadripertusus* Fahrenholz. The species was described from West Africa in 1915, and this is the first record of its occurrence in the western hemisphere. The louse was first noticed in central Florida in the summer of 1945. Since then it has been found in many other localities and it now appears to be widespread throughout peninsula Florida.

The adult lice are confined almost entirely to the brush of tails of cattle and the eggs are laid mostly on the long hairs of the brush. Because of their location, these insects are commonly referred to as "tail lice" by stockmen.

Mr. Bruce stated that neither the arsenical dips used against ticks nor low concentration DDT sprays are effective against the "tail louse". He indicated that this louse can be controlled effectively by thoroughly spraying the infested animals with a suspension containing 1.5% DDT.

A. N. TISSOT

ADDRESS UNKNOWN

The mailing address of the following members of the society is either unknown or believed to be wrong. If their correct address is known by anyone, please notify the secretary as soon as possible.

Burrell, Robert W.
Crutchfield, C. M.
Edwards, George A.
Gahan, J. B.
Herald, E. S.
Maughn, Douglas
Reitmeier, H. S.
Taylor, Mrs. K. P. A.
Wisecup, C. B.
Wylie, W. D.

EIGHTH INTERNATIONAL CONGRESS OF ENTOMOLOGY

The eighth International Congress of Entomology will be held in Stockholm, Sweden, August 8-15, 1948. The fact that all steamship sailings are currently booked to capacity for months in advance makes it seem necessary for those expecting to attend the congress in 1948 to arrange for passage as early as possible. Steamship companies have not issued sailing lists for 1948, but expect to do so in the early fall. A number of lines have listed sailings for the present season, among them, the Cunard, French, Belgian, Swedish, Norwegian, Gdynia (Polish), Holland-American, etc., the first mentioned expecting soon to have two new steamers in service. It is understood that the Thirteenth International Congress of Zoology will be held in Paris July 21 to 27, 1948, and it is hoped that all entomologists going to Stockholm will plan to attend the Zoological Congress also in order that the interests of the enomologists may be fully represented before the more comprehensive body. Should a sufficient number of individuals indicate that they expect to sail about mid-June, it may be feasible to engage passage on the same steamer. Early information as to the probable number of participants is especially desired in order that the housing committee in Stockholm may make the necessary arrangments. The undersigned, as member of the executive committee, would appreciate it if he be kept informed as early as possible as to plans of those expecting to attend the sessions.—O. A. Johannsen, Comstock Hall, C. U., Ithaca, N. Y. June, 1947.

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OBSERVATIONS ON *DOLOMEDES ALBINEUS* Hentz

JON L. HERRING and HERNDON DOWLING, JR.[1]
University of Florida

The spiders of the Genus *Dolomedes* in Florida are most often observed at the water's edge or running across its surface. The following observations, however, are concerned with a species that is an inhabitant of tree-trunks in the vicinity of water.

On the night of July 2, 1947, an aggregation of *D. albineus* was seen in a tree near the edge of Payne's Prairie, Alachua County, Florida. The group was discovered at about 9:30 P. M. as we were hunting with headlamps near the water's edge. A single large individual was observed near the base of a sugarberry tree (*Celtis laevigata* Willd.) which was about twenty feet from the water. When first seen, the spider appeared to be alone, but closer examination of the tree showed the presence of several others of the same species.

Two large-bodied individuals, both within eight feet of the ground, proved to be females. In the higher branches many smaller and more slender spiders were seen. These were quite agile and more difficult to capture than the others, but upon examination we found them to be the males of the same species. Three spiders, about twenty feet from the ground, were positively identified as this sex and several other spiders, some feet higher, could not be seen clearly but were thought to be males because of their quick movements when disturbed.

Other trees in the vicinity were investigated, including several other sugarberry trees in the same grove and willows (*Salix longipes* Shuttl.) at the water's edge. However, no other spiders of this species were found. The tree containing the spiders was the largest in the group (about 75 feet tall). The other trees were much smaller, being only about one-half as high.

All of the spiders examined were fully adult and, since all of them were found in the same tree, although other trees of the same type were nearby, it is thought that this group had assembled for breeding purposes.

We express our appreciation to Dr. H. K. Wallace, of this department, for identifying specimens which were collected.

[1] Department of Biology and Geology.

NOTICE OF ANNUAL MEETING

The date and place of the next annual meeting of the Florida Entomological Society have been set by the executive committee. The meeting will be held in Gainesville on the weekend of December 12-13, 1947. Please make plans to attend this meeting and be sure to prepare papers for presentation.

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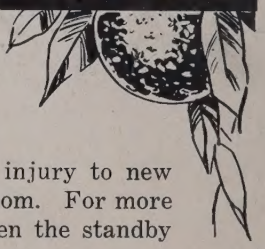

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